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Response

Applicant: Robin Alexis Takasugi et al.

Serial No.: 10/672,975

Filed: September 26, 2003

Docket No.: 10014268-1 / H303.154.101

Title: PREFETCH CONTROLLER FOR CONTROLLING RETRIEVAL OF DATA FROM A DATA STORAGE DEVICE

REMARKS

This is responsive to the Non-Final Office Action mailed April 25, 2006. In that Office Action, the Examiner rejected claims 1-30 under 35 U.S.C. §102(b) as being anticipated by Hicken et al., U.S. Patent No. 6,092,149 ("Hicken").

With this Response, Applicant respectfully traverses the Examiner's rejection of claims 1-30. Claims 1-30 remain pending in the application and are presented for reconsideration and allowance.

35 U.S.C. §102 Rejections

The Examiner rejected claims 1-30 under 35 U.S.C. §102(b) as being anticipated by Hicken et al., U.S. Patent No. 6,092,149 ("Hicken").

Independent claim 1 recites "a sequential read detector configured to generate a new sequential read indication for the current host command if the current host command and a previously received host command specify read operations that are non-sequential", "a transfer length generator configured to provide a first transfer length value to the data storage device if the new sequential read indication is generated for the current host command, thereby requesting data specified by the current host command and prefetch data, and provide a second transfer length value to the data storage device if the new sequential read indication is not generated for the current host command", and "wherein the first transfer length value is determined by adding a prefetch value to a transfer length value specified in the current host command." Hicken does not teach or suggest adding a prefetch value to a transfer length value specified in a current non-sequential read command, and then providing this sum to a data storage device, thereby requesting data specified by the current host command and prefetch data.

With respect to independent claim 1, the Examiner stated that:

Hicken et al. disclose . . . a transfer length generator [For every read command the invention determines how much data to prefetch after the requested data is retrieved (column 10, lines 62-67); the transferred data comprises the "requested data" and the "prefetched data" as shown in figure 1F, and the transfer length value is the sum of the length of the requested data and the length of the prefetched data] . . . and wherein the first transfer length value is determined by adding a prefetch value to a transfer length

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value specified in the current host command (For every read command the invention determines how much data to prefetch after the requested data is retrieved (column 10, lines 62-67); the transferred data comprises the "requested data" and the "prefetched data" as shown in figure 1F, and the transfer length value is the sum of the length of the requested data and the length of the prefetched data]. (Office Action at para. no. 5, pages 2-5) (emphasis in original).

As the Examiner indicated above, Hicken discloses "[f]or every read command the invention determines how much data to prefetch after the requested data is retrieved." (Hicken at col. 10, lines 62-63) (emphasis added). Thus, the prefetch in Hicken is a separate transfer that is determined and performed "after" the requested data is retrieved. Hicken does not add a prefetch value to a transfer length value specified in a current read command, and then provide this sum to a data storage device, as recited in claim 1.

The Examiner stated above that "the transfer length value is the sum of the length of the requested data and the length of the prefetched data", but did not provide any citation to Hicken to support this statement. Applicant could find no disclosure in Figure 1F or its corresponding description, nor anywhere else in Hicken, that teaches or suggests adding a prefetch value to a transfer length value specified in a current read command, and then providing this sum to a data storage device.

In addition, the Examiner did not appear to address the language "thereby requesting data specified by the current host command and prefetch data" in claim 1. As discussed above, the prefetch in Hicken is a separate transfer that is determined and performed "after" the requested data is retrieved. Hicken does not teach or suggest adding a prefetch value to a transfer length value specified in a current non-sequential read command, and then providing this sum to a data storage device, thereby requesting data specified by the current host command and prefetch data, as recited in claim 1.

In view of the above, independent claim 1 is not taught or suggested by Hicken. Applicant respectfully requests removal of the rejection of claim 1 under 35 U.S.C. §102(b), and requests allowance of this claim. Since dependent claims 2-11 further define patentably distinct claim 1, and are further distinguishable over the cited reference, claims 2-11 are

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believed to be allowable over the cited prior art. Applicant respectfully requests removal of the rejection of claims 2-11 under 35 U.S.C. §102(b), and requests allowance of these claims.

Independent claim 12 recites "adding a prefetch length value to the first transfer length value if the current read command and the previous read command are non-sequential, thereby generating a second transfer length value; and outputting the second transfer length value to the data storage device." As described above with respect to claim 1, there is no teaching or suggestion in Hicken regarding adding a prefetch value to a transfer length value specified in a current non-sequential read command, and then providing this sum to a data storage device. For the reasons set forth above with respect to claim 1, Hicken does not teach or suggest the above-quoted limitations of claim 12.

In view of the above, independent claim 12 is not taught or suggested by Hicken. Applicant respectfully requests removal of the rejection of claim 12 under 35 U.S.C. §102(b), and requests allowance of this claim. Since dependent claims 13-16 further define patentably distinct claim 12, and are further distinguishable over the cited reference, claims 13-16 are believed to be allowable over the cited prior art. Applicant respectfully requests removal of the rejection of claims 13-16 under 35 U.S.C. §102(b), and requests allowance of these claims.

Independent claim 17 recites "transfer length generation means for adding a prefetch length value to a transfer length value specified in the current host command if the current host command specifies a non-sequential read operation, the transfer length generation means configured to output a sum of the prefetch length value and the transfer length value to the storage means." As described above with respect to claim 1, there is no teaching or suggestion in Hicken regarding adding a prefetch value to a transfer length value specified in a current non-sequential read command, and then providing this sum to a data storage device. For the reasons set forth above with respect to claim 1, Hicken does not teach or suggest the above-quoted limitations of claim 17.

In view of the above, independent claim 17 is not taught or suggested by Hicken. Applicant respectfully requests removal of the rejection of claim 17 under 35 U.S.C. §102(b), and requests allowance of this claim. Since dependent claims 18 and 19 further define patentably distinct claim 17, and are further distinguishable over the cited reference, claims

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18 and 19 are believed to be allowable over the cited prior art. Applicant respectfully requests removal of the rejection of claims 18 and 19 under 35 U.S.C. §102(b), and requests allowance of these claims.

Independent claim 20 recites "generating a new sequential read indication for the current host command if the current host command and a previously received host command specify read operations that are non-sequential; outputting a first transfer length value to the data storage device if the new sequential read indication is generated for the current host command, wherein the first transfer length value is determined by adding a prefetch value to a transfer length value specified in the current host command; and outputting a second transfer length value to the data storage device if the new sequential read indication is not generated for the current host command, the second transfer length value less than the first transfer length value." As described above with respect to claim 1, there is no teaching or suggestion in Hicken regarding adding a prefetch value to a transfer length value specified in a current non-sequential read command, and then providing this sum to a data storage device. For the reasons set forth above with respect to claim 1, Hicken does not teach or suggest the above-quoted limitations of claim 20.

In view of the above, independent claim 20 is not taught or suggested by Hicken. Applicant respectfully requests removal of the rejection of claim 20 under 35 U.S.C. §102(b), and requests allowance of this claim. Since dependent claims 21-30 further define patentably distinct claim 20, and are further distinguishable over the cited reference, claims 21-30 are believed to be allowable over the cited prior art. Applicant respectfully requests removal of the rejection of claims 21-30 under 35 U.S.C. §102(b), and requests allowance of these claims.

CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 1-30 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 1-30 is respectfully requested.

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No fees are required under 37 C.F.R. 1.16(h)(i). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 08-2025.

The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Response should be directed to Jeff A. Holmen at Telephone No. (612) 573-0178, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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CERTIFICATE UNDER 37 C.F.R. 1.8:

The undersigned hereby certifies that this paper or papers, as described herein, are being transmitted via facsimile to Facsimile No. (571) 273-8300 on this 20th day of July, 2006.

By: Jeff A. HolmenName: Jeff A. Holmen